

WHAT IS BEING CLAIMED IS:

## 1. A bone screw system, comprising:

a bone screw having a head adapted to be driven by a tool and a shank portion extending longitudinally from said head, said shank portion having threads formed on at least a portion thereof and a bore extending longitudinally to a closed distal end, said threaded portion having a plurality of apertures formed therein in open communication with said bore, said head having an opening formed therein and in open communication with said bore; and,

an adapter releasably lockingly coupled to said head of said screw and sealingly engaged with said bore for injection of a composition therein to pass through said plurality of apertures and thereby aid in fixation of said threads in a patient's bone.

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3. The bone screw system as recited in Claim 1 where said adapter includes a pair of opposing locking lugs extending therefrom adjacent a distal end thereof.

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5. The bone screw system as recited in Claim 4 where each of said pair of recesses has a longitudinally directed section for guiding displacement of said locking lugs responsive to insert of said adapter distal end into said opening in said head, and an angularly directed section to provide releasable locking engagement with said locking lugs.

6. The bone screw system as recited in Claim 1 where said opening in said head has a substantially conically shaped interior surface portion adjacent to said bore.

7. The bone screw system as recited in Claim 6 where said adapter has a substantially conically shaped external distal end surface corresponding to said conically shaped internal surface portion of said opening in said head to provide sealing engagement therebetween.

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8. The bone screw system as recited in Claim 6 where said adapter includes a pair of opposing locking lugs extending therefrom adjacent said conically shaped external distal end surface thereof.

9. The bone screw system as recited in Claim 8 where said opening in said head has a pair of recesses extending from a proximal end of said opening and formed in opposing interior wall surfaces thereof adjacent said conically shaped internal surface portion for respectively receiving said locking lugs therein.

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10. The bone screw system as recited in Claim 9 where each of said pair of recesses has a longitudinally directed section for guiding displacement of said locking lugs responsive to insert of said adapter distal end into said opening in said head, and an angularly directed section to provide releasable locking engagement with said locking lugs and provide said sealing engagement between said conically shaped surfaces.

11. The bone screw system as recited in Claim 10 where said adapter includes a luer-type coupling on a proximal end thereof.

12. The bone screw system as recited in Claim 11 where said adapter includes a grip section disposed intermediate said proximal and distal ends thereof.

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13. The bone screw system as recited in Claim 12 where said grip section is formed with a plurality of annular ridges.

14. The bone screw system as recited in Claim 12 where said plurality of annular ridges collectively form a longitudinally directed arcuate outer surface contour.

15. The bone screw system as recited in Claim 1 where said adapter includes a grip section disposed intermediate opposing ends thereof.

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16. The bone screw system as recited in Claim 15 where said grip section is formed with a plurality of annular ridges.

17. The bone screw system as recited in Claim 16 where said plurality of annular ridges collectively form a longitudinally directed arcuate outer surface contour.

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18. A bone screw system, comprising:

an adapter having a passage formed longitudinally therethrough;

a bone screw having a head adapted to be driven by a tool and a shank portion extending longitudinally from said head, said shank portion having threads formed on at least a portion thereof and a bore extending longitudinally to a closed distal end, said threaded portion having a plurality of apertures formed therein in open communication with said bore, said head having an opening formed therein and in open communication with said bore for receiving a distal end of said adapter therein, said adapter passage being disposed in aligned relationship with said bore; and,

means for releasably lockingly coupling said distal end of said adapter to said head of said screw.

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19. The bone screw system as recited in Claim 18 where said releasable locking means includes a pair of opposing locking lugs extending from an external surface of said adapter adjacent said distal end thereof, and a pair of recesses formed in opposing interior wall surfaces of said opening in said head for respectively receiving said locking lugs therein.

20. The bone screw system as recited in Claim 18 where said adapter includes a grip section disposed intermediate opposing ends thereof.

21. The bone screw system as recited in Claim 18 where said adapter includes a luer-type coupling on a proximal end thereof.

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22. The bone screw system as recited in Claim 1 where said opening in said head has a substantially conically shaped interior surface portion adjacent to said bore and said adapter has a substantially conically shaped external distal end surface corresponding to said conically shaped internal surface portion of said opening in said head to provide sealing engagement therebetween.

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